have been added. Accordingly, claims 16-37 and 48-54 are presented to the Examiner for re-examination in light of the amendments and remarks made herein.

On April 4, 2002, the Examiner contacted the undersigned and indicated that an error was made in the grouping of claims from a previous written restriction requirement that was dated January 15, 2002. In the initial restriction of January 15th, the Examiner grouped claims 1-30 of the present invention in one group drawn to a method of making a phosphorous article, claims 31-37 in another group drawn to a phosphor article, and claims 38-47 in another group drawn to a system for binding phosphor particles to a substrate. In response to the initial restriction requirement, Applicants chose to elect claims 1-30 for prosecution on the merits in the present application.

The Examiner then changed the initial restriction to include claims 1-15 of the present invention to form group I, which is drawn to a method of making a phosphorous article; claims 16-37 to form group II, which is drawn to a phosphorous article; and claims 38-47 to form group III, which is drawn to a system for binding phosphor particles to a substrate. In this latest restriction, the Examiner essentially moved claims 16-30 of the present invention from group I to group II. On April 4, 2002, Applicants were informed by the Examiner that the initial restriction requirement, as well as their initial election to prosecute claims 1-30, was nullified in view of the second restriction requirement that was provided orally by phone. In response to the Examiner's second restriction requirement, Applicants made an election with traverse to prosecute the group II claims (*i.e.*, claims 16-37) in response to the Examiner's second restriction requirement.

In the second restriction requirement, the Examiner alleges that the group I and II claims are related to a process of making and a product made, respectively, and are allegedly distinct

from one another because the product as claimed can be made by another and materially different process. The Examiner further alleges that the group III and group II claims are related as an apparatus and product made (respectively), and are allegedly distinct from one another because the product claimed can be made by another and materially different apparatus. The Examiner also contends that the group I and group III claims are related as a process and an apparatus for its practice (respectively), and are allegedly distinct from one another because the process as claimed can be practiced by another materially different apparatus or by hand. Applicants, however, respectfully traverse this second restriction as set forth by the Examiner.

With regard to at least claims 1-15 and 16-30, Applicants respectfully submit that the exact same process steps set forth in claims 1-15 are also set forth in claims 16-30. Accordingly, Applicants respectfully submit that no additional burden is placed on the Office by examining claims 1-15 and 16-30 in the same application because the prior art search required for claims 1-15 must also be the same for claims 16-30. Additionally, it is noted that the Examiner originally put claims 1-30 in the same group in the initial restriction made on January 15th. Because claims 1-30 include the exact same process steps, and, therefore, require the same prior art search, Applicants respectfully submit that the restriction at least between claims 1-30 is improper and should be withdrawn.

The Examiner alleges that the Information Disclosure Statement (IDS) filed on November 15, 2000 fails to comply with 37 CFR 1.98(a)(2), which requires a copy of each publication that is listed on the IDS form PTO-1449 be furnished to the Office. In particular, the Examiner has not considered the reference entitled "The Field Emission Display" by Chris Curtain (listed as reference "C1" on form PTO-1449). A copy of this reference is not presently

available to include with this response. However, as soon as a copy of this reference becomes available, it will be submitted to the Examiner for consideration.

The Examiner rejected independent claim 31 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner objects to the claim language "a fluorescent material layer (FML) formed on the anode electrode, the FML having phosphor particles disposed thereon." The Examiner contends that the present invention discloses, on page 7, lines 20-21 of the specification, that the phosphor particles (135) are *in* the fluorescent material layer (130), and on page 6, lines 20-21, that the phosphor particles (135) are deposited *on the anode electrode* (120). The Examiner then concludes that it is unclear what the fluorescent material layer (130) comprises and which layer is disposed on the anode. In response thereto, Applicants have amended claim 31 to more clearly indicate that the phosphor particles are disposed in the fluorescent material layer. Accordingly, in view of this amendment to claim 31, Applicants respectfully request that the rejection under 35 U.S.C. §112, second paragraph, be withdrawn.

The Examiner rejected claims 16-37 under 35 U.S.C. §102(e) as being anticipated by Janning (U.S. Patent No. 5,982,082). Applicants respectfully traverse this rejection provided by the Examiner.

In the rejection, the Examiner alleges that Janning discloses it is known in the art to produce field emission displays having substrates with an anode formed on a first surface of the glass substrate and a fluorescent material layer that includes phosphor particles applied to the anode surface. The Examiner further alleges that the phosphor particle bound substrate disclosed

by Janning is identical to or only slightly different from the phosphor bound particle substrate as defined by claims 16-37 of the present invention. Applicants, however, respectfully traverse this rejection as set forth by the Examiner.

Janning discloses a field emission display device wherein a field emitter cathode matrix is opposed by a phosphor-coated, transparent faceplate that serves as an anode of the field emission display device. Janning further discloses that a barrier layer in the form of a thin film of insulator material (such as a thin silicon nitride layer) is applied directly to the phosphor material to permit the tunneling of electrons but inhibit the flow of ions or scattering of the phosphors within the device when it is activated (note Janning, col. 6, line 60 – col. 7, line 2). Applicants respectfully submit, however, that although Janning may disclose a phosphor-coated, transparent faceplate with a barrier layer formed over the phosphor coating, Janning does not disclose or suggest that this barrier layer is formed by removing a substrate from a binder solution at a predetermined rate as set forth by the independent claims of the present invention. Janning, on the other hand, discloses that either chemical vapor deposition (CVD) or sputtering techniques are used for the deposition of the silicon nitride barrier layers over the phosphor material (note Janning, col. 12, lines 43-47). Independent claim 16 of the present invention recites "applying phosphor particles to the substrate; submerging the substrate into a binder solution; and removing the substrate from the binder solution at a predetermined rate." Independent claim 31 of the present invention recites "wherein the phosphor particles are bound to the substrate by submerging the substrate into a binder solution and removing the substrate from the binder solution at a predetermined rate." Newly added independent claim 48 recites "phosphor particles that are bound to the anode electrode by removing the substrate from a binder solution at a predetermined rate." Accordingly, because Janning fails to teach or suggest

binding phosphor particles to a substrate by removing the substrate from a binder solution at a predetermined rate, Applicants respectfully submit that Janning cannot possibly anticipate independent claims 16, 31, and 48 of the present invention, and all claims dependent thereon, for at least this reason.

Applicants respectfully submit that by removing the phosphor particle bound substrate from the binder solution at a predetermined rate causes the phosphor particles disposed thereon to bind stronger to each other and to the substrate itself. The Applicants disclose on page 8, lines 16-22 of the specification that if the phosphor particles are not properly bound together by the binder material, the phosphor particles will typically shed from the faceplate of the Field Emission Display (FED) device to which the phosphor particles are bound. FED devices tend to be intolerant to phosphor particle shedding because the loose phosphor particles typically affect the operation of the emitters on the base plate upon which the phosphor particles typically fall. Accordingly, because the phosphor particles are bound stronger to each other and to the substrate as a result of the process of removing the substrate from the binder solution at a predetermined rate, it is respectfully submitted that the phosphor particle bounded substrate of the present invention is distinct from the phosphor-coated faceplate of Janning. Therefore, because the particle bound substrate of the present invention as defined by claims 16, 31, and 48 (and all claims dependent thereon) is a different product from the phosphor-coated faceplate of Janning as a result of the phosphor binding process of the present invention, Applicants respectfully submit that these claims cannot possibly be anticipated by Janning.

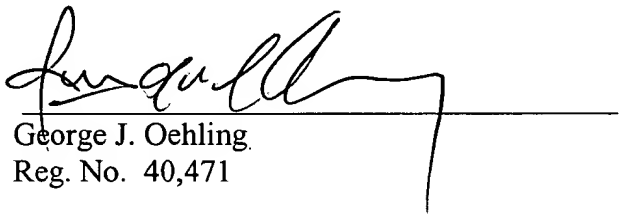
Applicants respectfully submit that the remaining rejections in the present application are improper and should be withdrawn because the cited reference fails to teach or suggest all of the

limitations of the claims as discussed in detail above. Accordingly, in view of the amendments and remarks presented herein, a Notice of Allowance is respectfully solicited.

It is believed that no fee is due in connection with filing this paper; however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason, the Assistant Commissioner is authorized to deduct said fees from Williams, Morgan & Amerson, P.C. Deposit Account No. 50-0786/2008.002800.

The Examiner is invited to contact the undersigned at (713) 934-4058 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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APPENDIX A

31. (Amended) A phosphor particle bounded substrate, comprising:

a substrate having first and second surfaces;

an anode electrode formed on the first surface of the substrate;

a fluorescent material layer (FML) formed on the anode electrode, the FML having phosphor particles disposed [thereon] therein;

wherein the phosphor particles are bound to the substrate by submerging the substrate into a binder solution and removing the substrate from the binder solution at a predetermined rate.

48. (New) A substrate, comprising:

an anode electrode formed on a first surface of the substrate; and

a fluorescent material layer (FML) formed on the anode electrode, the FML having phosphor particles that are bound to the anode electrode by removing the substrate from a binder solution at a predetermined rate.

49. (New) The substrate of claim 48, wherein the binder solution comprises a solution of approximately 0.1%-2.0 % by body weight potassium silicate in water.

50. (New) The substrate of claim 48, wherein the binder solution comprises water and at least one of potassium silicate, sodium silicate, ammonium silicate and polyvinyl alcohol.

51. (New) The substrate of claim 48, wherein the binder solution comprises alcohol and organo-silicate.

52. (New) The substrate of claim 48, wherein the predetermined rate is approximately one inch per minute.

53. (New) The substrate of claim 48, wherein the phosphor particles are bound to the substrate by submerging the substrate into a binder solution, removing the substrate from the binder solution at a predetermined rate, and placing the substrate into a furnace to heat the substrate to a temperature between about 400° and 700° C.

54. (New) The substrate of claim 53, wherein the substrate is heated to a temperature between about 400° and 500° C.